HITACHI

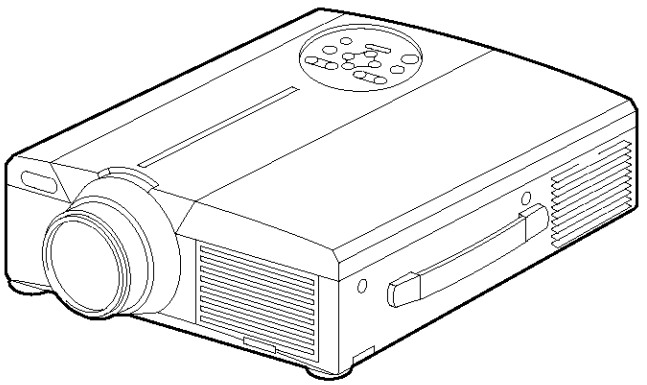
Liquid Crystal Projector

Model

CP-X960W/E

USER'S GUIDE

Thank you for purchasing the Hitachi liquid crystal projector. Please read this user's manual thoroughly to ensure correct usage through understanding. After reading, store this instruction manual in a safe place for future reference.



Outline

This liquid crystal projector is used to project various computer signals as well as NTSC/PAL/SECAM video signals onto a screen. Little space is required for installation and large images can easily be realized.

Features

(1) Outstanding brightness
The UHB lamp and high-efficiency optical system assure a high level of brightness.

(2) Partial magnification function
Interesting parts of images can be magnified for closer viewing.

(3) Distortion correction function
Distortion-free images are quickly available.

(4) Power zoom and power focus.

(5) P in P function

(6) USB jack

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Before Use

<Before Using>

About the Symbols Various symbols are used in this instruction manual and on the product itself to ensure correct usage, to prevent danger to the user and others, and to prevent property damage. The meanings of these symbols are described below. It is important that you read these descriptions thoroughly and fully understand the contents.

Warning This symbol indicates information that, if ignored, could possibly result in personal injury or even death due to incorrect handling.

Caution This symbol indicates information that, if ignored, could result possibly in personal injury or physical damage due to incorrect handling.

Typical Symbols

This symbol indicates an additional warning (including cautions). An illustration is provided to clarify the contents (the illustration to the left indicates danger of electrical shock).

This symbol indicates a prohibited action. The contents will be clearly indicated in an illustration or nearby (the symbol to the left indicates that disassembly is prohibited).

This symbol indicates a compulsory action. The contents will be clearly indicated in an illustration or nearby (the symbol to the left indicates that the power plug should be disconnected from the power outlet).

[Safety Precaution]

⚠ Warning

■ If a problem should occur.

- If smoke or a strange odor arise, continued use could result in fire or electrical shock. In such case, immediately turn off the power switch and then disconnect the power plug from the power outlet. After making sure that the smoke or odor has stopped, contact your dealer for repairs. Never attempt to make repairs yourself because this is dangerous.
- Do not use this projector if there is no image or sound, or if the sound is distorted. Continued use could result in fire or electrical shock.

Disconnect the plug from the power outlet.

In such case, immediately turn off the power switch, disconnect the power plug from the power outlet and contact your dealer.

- If water should enter the inside of this projector, immediately turn off the power switch, disconnect the power plug from the power outlet and contact your dealer.

■ Do not install on an unstable surface.

- Do not install this projector on an unstable surface such as a wobbly stand or incline because this could result in the projector falling and causing injury.

■ Do not open the cabinet.

- Never open the cabinet. Ther eis high voltage inside which can cause electrical shock. Contact your dealer for internal inspection, adjustment and repair.

Do not disassemble.

Do not use near water.

■ Do not modify.

Do not modify this projector because this could result in fire or electrical shock.

Do not disassemble.

■ Do not use in the bathroom.

Do not use this projector in the bathroom because this could result in fire or electrical shock.

Do not use near water.

■ Do not insert foreign objects.

- Do not insert metal objects through the ventilation openings, etc., of this projector or drop such objects inside because this could result in fire or electrical shock.

- **If a foreign object should enter this projector, immediately turn off the power switch, disconnect the power plug from the power outlet and contact your dealer.**

Disconnect the plug from the power outlet.

Continued use could result in fire or electrical shock. Use special caution in households where children are present.

■ Do not look through the lens when the lamp is on.

Never look through the lens when the lamp is on. The powerful light could adversely affect vision. Use special caution in households where children are present.

■ Avoid shock or impact on the projector.

If the projector should fall, resulting in damage to the cabinet, immediately turn off the power switch, disconnect the power plug from the power outlet and contact your dealer. Continued use could result in fire or electrical shock.

Disconnect the plug from the power outlet.

■ Do not place this projector in a container containing liquid.

Do not place flower vases, flower pots, cups, cosmetics, liquids such as water, etc., on top of this projector. Spillage could result in fire or electrical shock.

■ Use only the indicated power supply.

Use only the indicated power supply. The use of any other power supply could result in fire or electrical shock.

⚠ Warning

■ Handle the power cord with care.

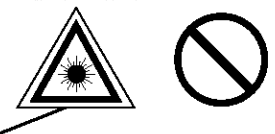
- **Do not damage, cut, process or strongly twist the power cord.** Placing heavy objects on the power cord, heating or strongly pulling the power cord can result in damage as well as fire or electrical shock.
  - Pulling on the power cord
  - Placing heavy objects on the power cord
  - Damaging the cord
  - Placing near heaters

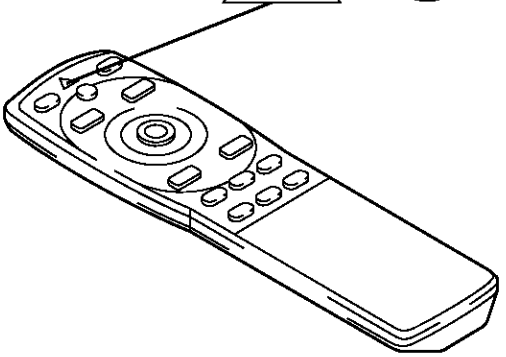
- **Do not position the power cord under the projector.** This can damage the power cord and cause fire or electrical shock. Also, do not place a spread, cover, etc., over the power cord because this could result in the inadvertent placing of heavy objects on the concealed power cord.
- If the power cord is damaged (exposed or broken core wires, etc.), contact your dealer for replacement; otherwise, fire or electrical shock could result.

- Make sure there is no dust, etc., on the power plug and insert a knife blade to make sure that there is no looseness.

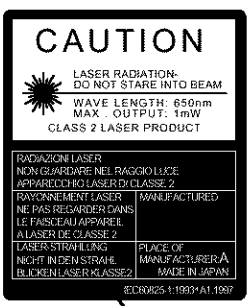
■ Do not allow the laser beam to enter the eyes.

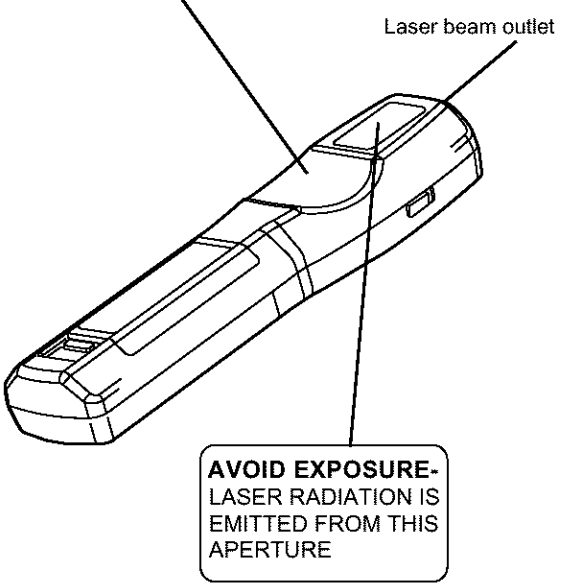
- This remote control is equipped with a laser pointer and a laser beam is emitted from the laser outlet. Do not look directly into the laser beam outlet or direct the laser beam at other people.
  Vision can be impaired if the laser beam enters the eyes. Use special caution in households where children are present.





■ High temperatures are generated when the lamp is lit, so do not place objects in front of the lens.





⚠ Caution

■ Do not sit or place heavy objects on this projector.

- **Do not sit on this projector.**
  This could result in overturning, leading to damage or personal injury. Use special caution in households where children are present.

- **Do not place heavy objects on this projector.**
  Placing heavy objects on this projector could result in loss of balance or falling and cause personal injury.

■ Do not block the ventilation openings.

Do not block the ventilation openings of this projector. Blocking ventilation could lead to internal overheating which could result in fire. Do not place this projector on its side during use or push it into a small, poorly ventilated location. Do not place this projector on a carpet or bedding or cover it with a table cloth, etc. Also, when installing this projector, make sure the ventilation openings are at least 30cm from the wall.

■ Care and maintenance.

For safety purposes, disconnect the power plug from the power outlet before starting the care and maintenance of this projector.

Disconnect the plug from the power outlet.

■ Battery usage.

- **Use only the specified batteries with this projector.** Do not mix old and new batteries because this could result in fire or personal injury due to battery cracking or leakage.

- **Make sure the plus and minus terminals are correctly aligned when loading the batteries.** Incorrect loading could result in personal injury or contamination of the surroundings due to battery cracking or leakage.

■ Clean the projector interior once every two years.

Request your dealer to clean the interior of the projector approximately every two years. Accumulations of dust inside the projector can result in fire or malfunction if not cleaned for an extended period. This cleaning is more effective if performed befor every humid periods such as rainy season, etc. Ask your dealer for details about internal cleaning.

■ Avoid installation in humid or dusty locations.

- **Do not install this projector in a humid or dusty location.** This could result in fire or electrical shock.

- **Avoid installation near the kitchen, a humidifier or other locations where there is oily smoke or humidity.** This could result in fire or electrical shock.

■ Use the caster brakes.

When installing this projector on a stand with casters, use the caster brakes to prevent the stand moving or overturning and causing personal injury.

■ Do not handle the power cord roughly.

- **Keep the power cord away from heaters** because the heat could melt the power cord and cause fire or electrical shock.
- **Do not touch the power plug with wet hands** because this could result in electrical shock.

- **When disconnecting the power plug, do not pull on the power cord.** This could damage the power cord and cause fire or electrical shock. Always grip the plug when disconnecting.

⚠ Caution

■ When the projector is not to be used for an extended period.

For safety purposes when the projector is not to be used for an extended period because of travel, etc., always disconnect the power plug from the power outlet. Also close the lens cover to prevent the lens surface being scratched.

Disconnect the plug from the power outlet.

■ Moving the projector.

- When moving the projector, be sure to close the lens cover, disconnect the power plug from the power outlet and disconnect all external connections. Failure to do this could damage the power cord and cause fire or electrical shock.

Disconnect the plug from the power outlet.

Avoid any impact or shock to the projector because this could result in malfunction.

- When moving this projector outdoors, protect it from wetting due to rain, etc. If the projector should become wet, dry it thoroughly before further use. Continued use while wet could result in fire or electrical shock.

[General Cautions]

■ Avoid excessively hot locations.

Do not place this projector in direct sunlight or near a hot object such as a stove, etc., because the heat could have adverse influence on the cabinet and other parts.

■ Sound volume.

Set the volume at a suitable level to avoid bothering other people. It is also better to keep the volume level low and close the windows at night to protect the neighborhood environment.

■ Lens care

Use commercially available lens tissue to clean the lens (used to clean cameras, eyeglasses, etc.). Be careful not to scratch the lens with hard objects.

■ Cabinet care.

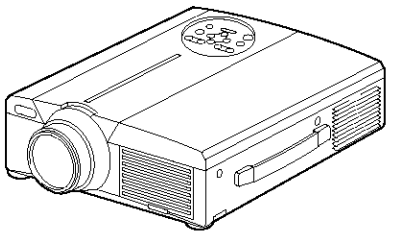
- The cabinet is made of plastic and discoloration or paint peeling can occur if wiped with a solvent such as benzine, thinner, etc.
- Before using chemical wipes, be sure to read and observe the instructions.
- Do not spray volatile substances such as insect repellent on the cabinet. Also, do not allow long-term close contact with rubber or vinyl products because this could result in discoloration, peeling paint, etc.
- Use a soft cloth to clean the cabinet and operation panel. When excessively soiled, dilute a neutral detergent in water, wet and wring out the cloth and afterward wipe with a dry cloth. Do not apply undiluted detergent directly to the projector.

■ Extended usage.

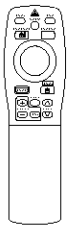
When using this projector for an extended period, stop periodically to rest the eyes to prevent eye fatigue.

Checking the package Contents

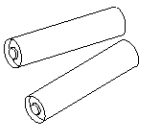
Make sure all of the following items are included in the package. If anything is missing, please contact your dealer.



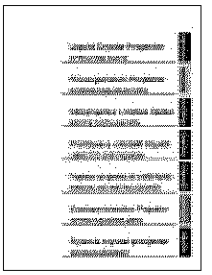
Projector unit



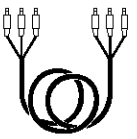
Remote control

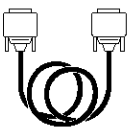


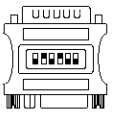
Remote control Batteries

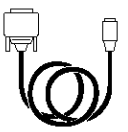


User's Guide (this document)









CP-X960W	Power Cord 110V-US 220-UK, Europe	3-Conductor video/Audio cable	RGB cable (15-15 pin M/M)	Mac adapter with dip switch	Mouse cable × 3
CP-X960E	220-UK, Europe	—			

Names and functions of each part

Main unit

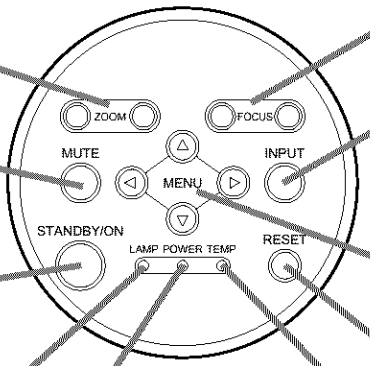
ZOOM button
Used to adjust the size of the image. (Refer to page 13.)

MUTE button
This button turns the sound on and off. Press once to turn the sound off; then press again to turn the sound back on.

STANDBY / ON button
Press this button to turn the power on and off. When turned off, the projector enters standby status. Refer to page 13 - 14 for details.

LAMP indicator
This indicator lights or blinks when the lamp is off. Refer to page 33 for details.

POWER indicator
This indicator lights or blinks during standby and during operation. Refer to page 33 for details.



FOCUS button
Used to adjust the focus of the image on the screen. (Refer to page 13.)

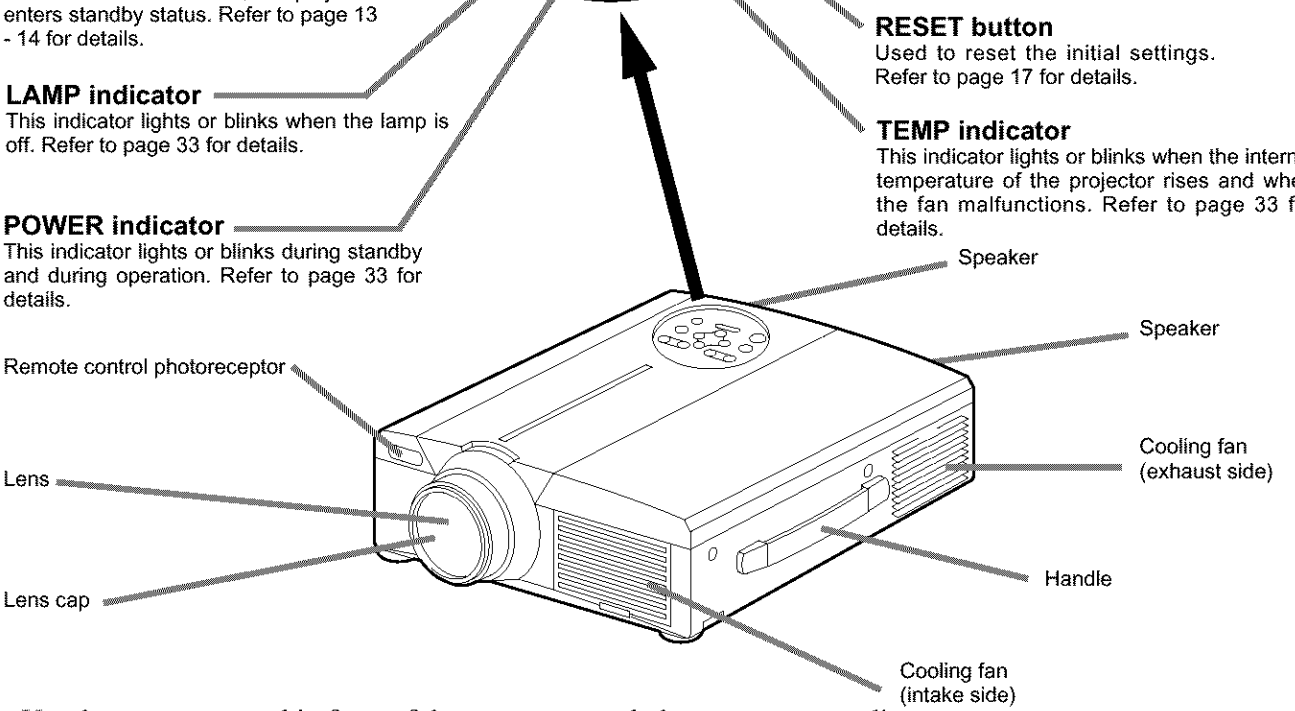
INPUT button
Press this button to switch the input. The input changes in the following sequence each time this button is pressed.

RGB1 → RGB2 → VIDEO

MENU button
Displays the image menu. Refer to page 17 - 21 for details.

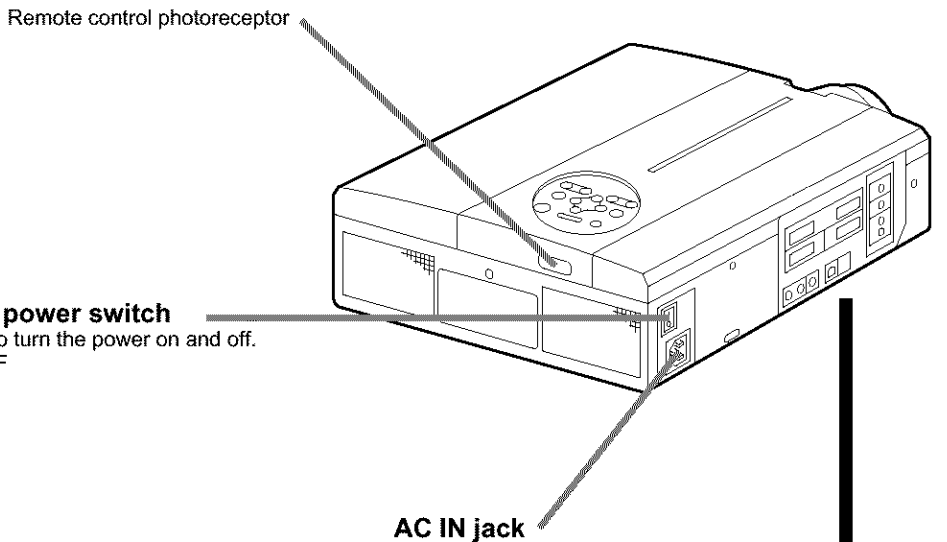
RESET button
Used to reset the initial settings. Refer to page 17 for details.

TEMP indicator
This indicator lights or blinks when the internal temperature of the projector rises and when the fan malfunctions. Refer to page 33 for details.



• Use the remote control in front of the remote control photoreceptor at a distance of about 5 m or less and an angle of 30 degrees to the left or right of the center.

Names and functions of each part (continued)

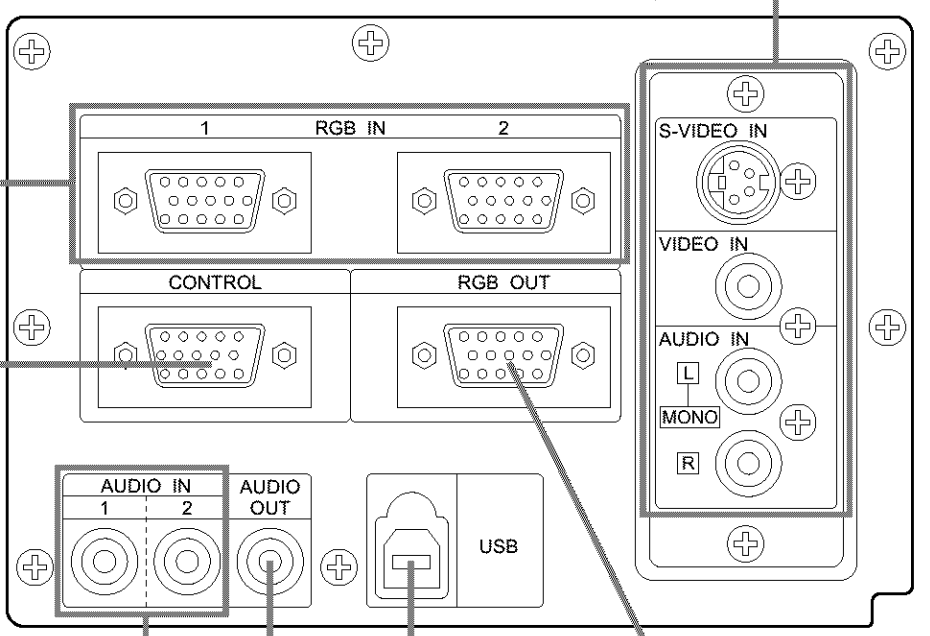

Remote control photoreceptor
Main power switch
Used to turn the power on and off.
○: OFF
|: ON
AC IN jack
Used to connect the accessory power cord.

⚠Caution Connecting to the AC IN jack

Make sure the accesory power cord is plugged into the AC IN jack as far as it will go. Incomplete connection can result in fire or electrical shock.

VIDEO IN jack

S-VIDEO IN jack
Mini DIN 4-pin connector
VIDEO IN jack
RCA jack
AUDIO L/R IN jack
RCA jack



RGB IN jack
D-sub 15-pin shrink (1/2)

CONTROL jack
D-sub 15-pin shrink

AUDIO IN jack (RGB)
Stereo mini jack

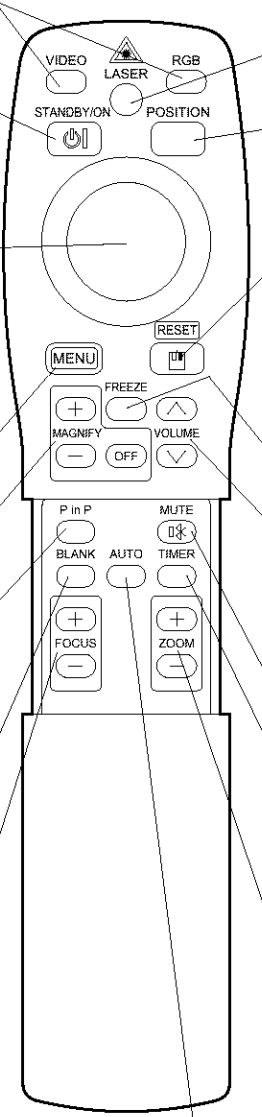
USB jack
The mouse cursor can be controlled by remote control by connecting to a personal computer.

RGB OUT jack
D-sub 15-pin shrink

AUDIO OUT jack (RGB/VIDEO)
Stereo mini jack

Names and functions of each part (continued)

Remote control transmitter



VIDEO, RGB button
Press to switch the input. (Refer to page 13, 19.)

STANDBY / ON button
Used to turn the power on and off.
Press for 1 sec. or more to turn the power off (enter standby status).
(Refer to pages13 and 14.)

*** DISK PAD**
(1) Used to select menu items when the menu screen is displayed (refer to page 16 - 18).
(2) When the menu is not displayed, the mouse shift function and left click function are active.
*1 (3) After the POSITION button has been pressed, the screen can be moved upward, downward and to the left and right.

*** MENU button**
Used to turn the menu screen display on and off. (refer to page 17 - 21).

*** MAGNIFY button**
Used to magnify the displayed image.

*** P in P button** *2
Used to turn P in P (Picture In Picture: displays sub video signal images in the RGB signal) on and off.
Each time this button is pressed, operation will change in the following sequence:
(1) Reduce sub screen→(2) Magnify sub screen→(3)Off.
(1) ~ (3)

BLANK button
Used to turn blanking on and off.
(Refer to page 20.)

FOCUS button
Used to adjust the focus of the image on the screen. (Refer to page 13.)

LASER button
Turns the laser beam on and off. Refer to page 11 cocnerning usage and observe the cautions.

*** POSITION button**
Pressing the top, bottom, left or right of Disk Pad after pressing this button causes corresponding movement (Effective only during RGB signal selection).

*** RESET MOUSE / RIGHT button**
(1)Operates as the RESET button when the menu is displayed. Press this button to return to the initial settings.
(2)Used to click the right mouse button when the menu is not displayed (refer to page 25,26).
*1 (3)Pressing this button after scrolling the screen with POSITION returns the screen to the original position.

*** FREEZE button**
Used to turn the freeze (still) image display on and off.

VOLUME button
Adjusts the volume of the sound. Press [∧] to increase the volume and (∨) to decrease the volume. When there is no video signal input, operation is not possible when the input video signal is outside the sync range.

*** MUTE button**
Applies Mute. (Press the Play button again to cancel.)

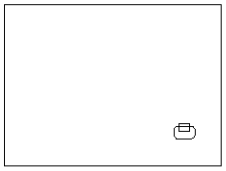
TIMER button
Turns the display of the time set with the Timer on the Menu screen on and off.
The timer is not displayed when no input signal is detected or when SYNC is out of range or during blanking or during freezing.
Refer to page 20, 21 concerning the method used to set the timer.

ZOOM button
Used to adjust the size of the image. (Refer to page 13.)

*** AUTO button**
Used to execute auto-adjust.*3

***These functions do not operate when initial screen message "NO INPUT IS DETECTED" or "SYNC IS OUT OF RANGE" is displayed.**

*1 **POSITION icon**
When the POSITION button is pressed, the moving display icon will appear at the bottom right of the screen.
While displaying the icon, you can operate POSITION.



*2
With the P in P function, signals are input to both RGB and VIDEO. This function operates only when the RGB signal has been selected. There is no display in the case of the no signal and when the RGB signal is outside the sync range.
When P in P is used, audio is automatically switched to video.
In P in P, audio input can be switched by pressing the VOL ∧and VOL ∨ keys of the remote control, displaying the audio bar and moving Disk Pad left and right during the display.

*3 **Auto adjustment function**
The projector automatically adjusts 4 items (V. POSIT, H. POSIT, H. PHASE, H. SIZE).
When you choose AUTO (move the cursor to the right from the manual operation position), the AUTO confirmation menu shown below is indicated.

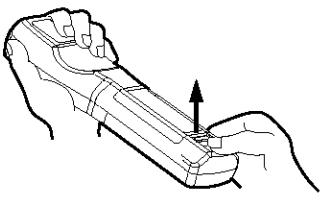
Caution
- Auto adjust requires several tens of seconds.
- Auto adjust may not operate correctly in some cases, depending on the computer connected and the signal.
- Auto adjust may not operate correctly in some cases, depending on the type of image.
- Execute auto adjust with the display of the application being run by the computer at maximum.
- After auto adjust, the image may be slightly dark in some cases due to automatic adjustment of the signal level.
- Auto adjust canot execute when the initial display is "NO INPUT IS DETECTED" or "SYNC IS OUT OF RANGE" during FREEZE or MAGNIFY.

Names and functions of each part (continued)

Loading the batteries Loading AA batteries into the remote control.

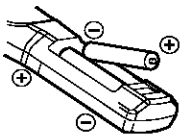
1 Remove the battery cover.

Push the knob while lifting up the battery cover.



2 Loading the batteries.

Make sure the plus and minus poles are correctly oriented.



3 Close the battery cover.

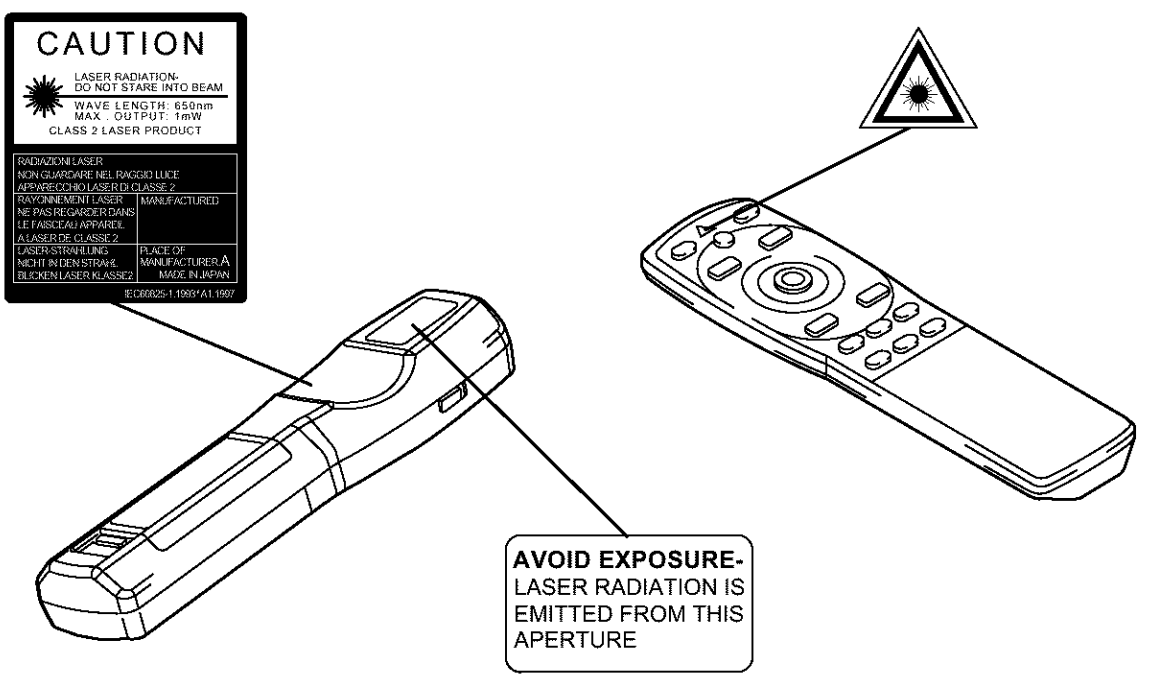
⚠Caution Battery usage cautions

- Use only the specified batteries with this projector. Also, do not mix new and old batteries. This could cause in battery cracking or leakage, which could result in fire or personal injury.
- When loading the batteries, make sure the plus and minus poles are correctly oriented as indicated in the projector. Incorrect orientation could cause battery cracking or leakage, which could result in personal injury or pollution of the surrounding environment.

Caution Remote control usage cautions

- Do not drop the remote control or apply impact.
- Do not wet the remote control or place it on any wet object. Such actions could result in malfunction.
- When not to be used for an extended period, remove the batteries from the remote control.
- Replace the batteries when remote control operation becomes difficult.
- Do not place the remote control close to the cooling fan of the projector.
- Do not disassemble the remote control in case of malfunction. please bring it to the service station.

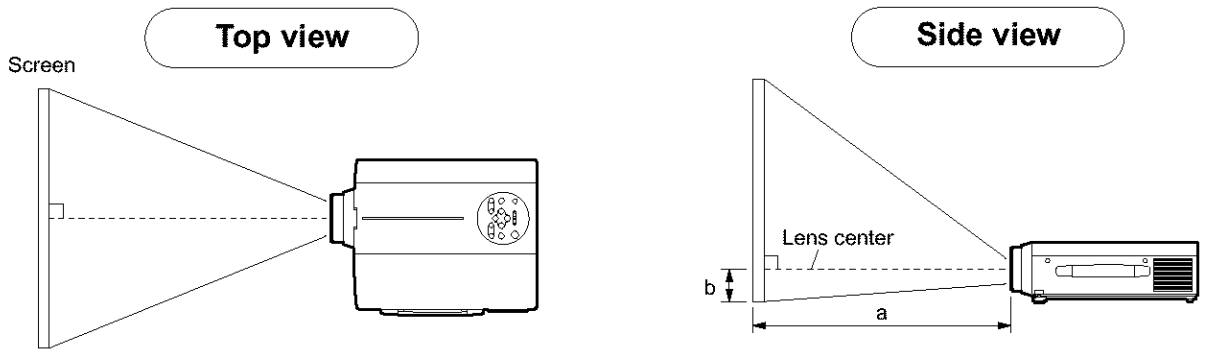
⚠ Warning **The laser pointer of the remote control is used in place of a finger or rod. Never look directly into the laser beam outlet or point the laser beam at other people. The laser beam can cause vision problems.**



Installation

Typical LCD Projector and Screen Installation

Use the diagram below as reference to determine the screen size and projection distnace.



Screen size (inches)	a (inches)		b (inches)
	Minimum	Maximum	
40	55	73	1
60	85	114	2
80	114	151	2
100	144	191	3
120	176	231	3
150	220	282	4
200	291	386	6

a. Distance from the LCD projector to the screen
b. Distance from the lens center to the bottom of the screen (a,b : +/-10%).

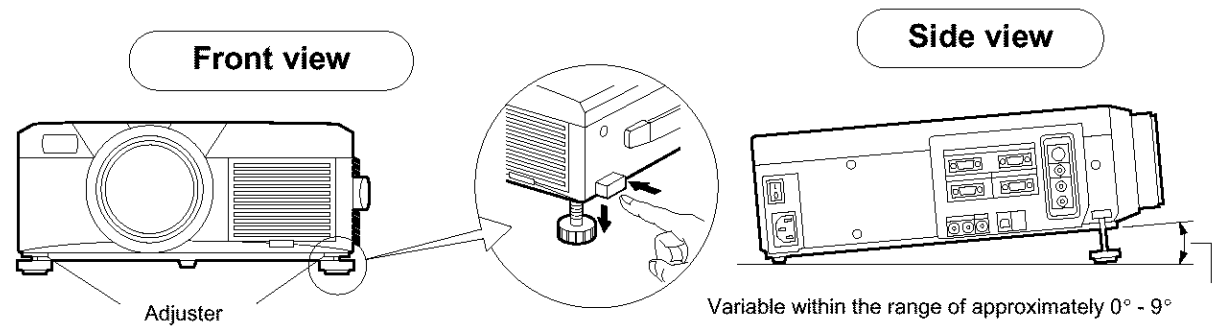
Caution

The LCD projector should normally be used level (the legs can point upward).
Positioning the projector sideways, or with the lens pointing upward or downward can cause the internal temperature to rise, which could result in a malfunction.

The projection distances shown in the diagram to the left are for full size (800 x 600 dots).

Using the adjusters

Use the adjusters on the bottom to adjust the projection angle.

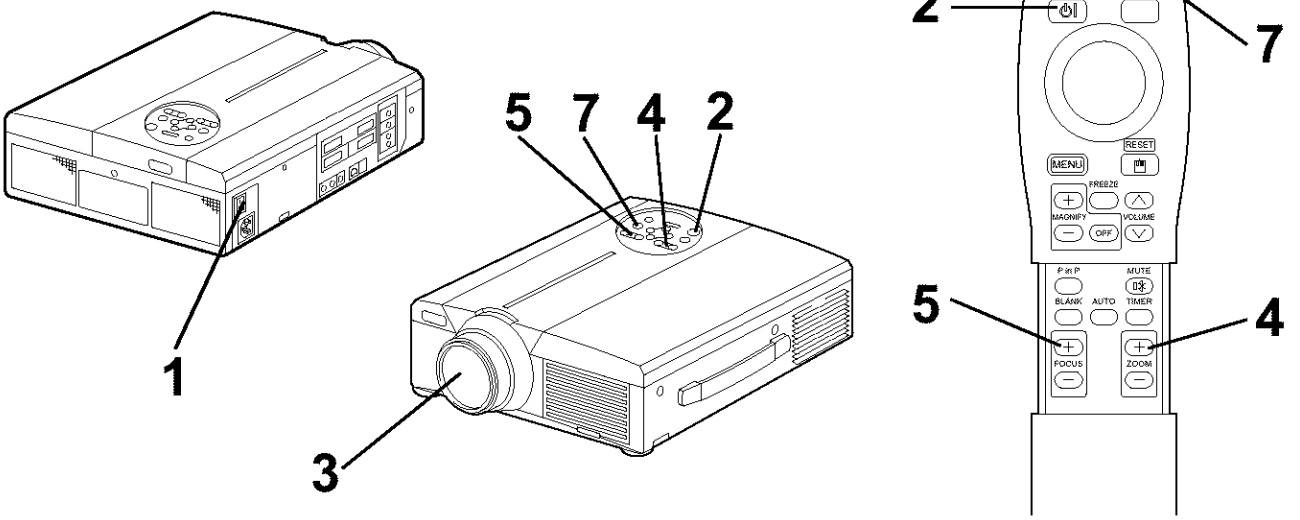


1. Lift up the projector and release the adjuster lock.
2. After adjusting the projection angle, firmly lock the adjusters.
3. Rotate the adjusters for fine adjustment.

⚠Caution
- Do not release the locks unless the projector is being held; otherwise, the projector could overturn or the fingers could get caught and cause personal injury.
- Do not force the adjusters to rotate. This could damage the adjusters or cause the lock to fail.
- Lock the adjusters firmly. If the lock is difficult to operate, change the angle slightly and try again.

Basic operations

To project



1 Turn on the main power switch of the projector [I: ON].

• The Power indicator lights orange.

2 Press the STANDBY / ON button.

• The Power indicator will blink green and then light green.
• The green blinking indicates warmup.
• After the power is turned on, the lamp will be cooled for approximately 1 min. and the power cannot be turned on even by pressing the STANDBY/ON button.

3 Remove the lens cap.

4 Use the ZOOM button to adjust the screen size.

5 Use the FOCUS button to adjust the focus.

(1) The display shown to the right will appear when the FOCUS button is pressed.
(2) Use the FOCUS button to adjust the focus until the image is sharp.
(3) The message "Focus" will disappear if any other button is pressed.

+ + + FOCUS + + +

• (When there is no input signal, the Focus characters are not displayed when the input signal is outside the sync range.)

6 Turn on the power to the connected equipment.

Refer to page 31 concerning the connection of other equipment.

7 Press either the INPUT button of the projector or the VIDEO/RGB button of the remote control to select the signal to be projected on the screen.

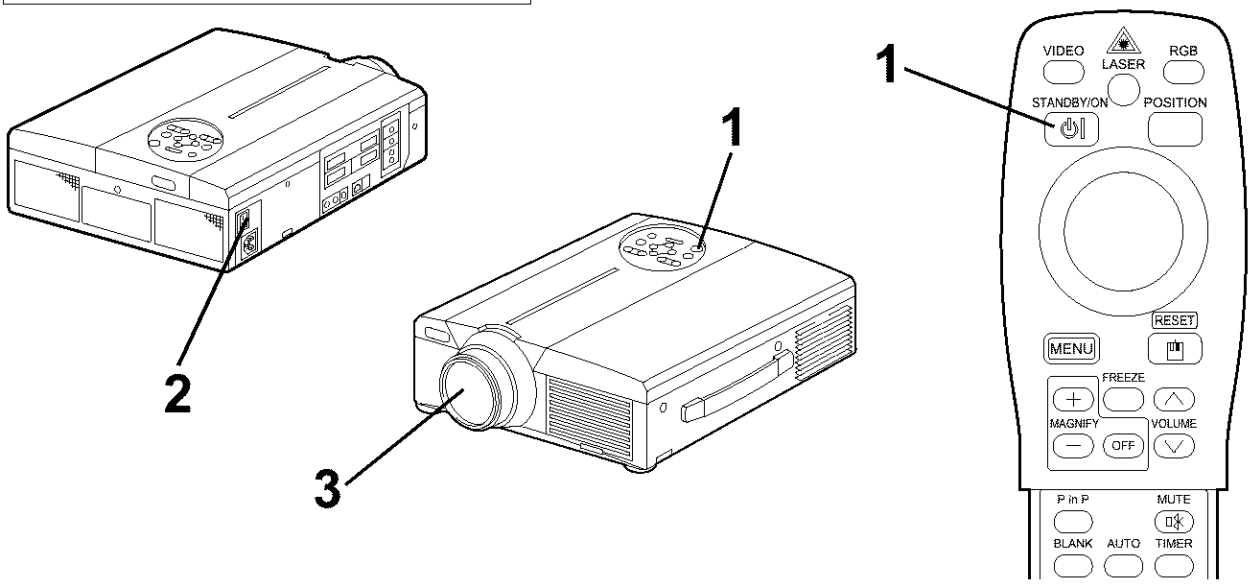
Example on-screen display

RGB 1

The selected signal input channel will be displayed in the lower right part of the screen.

Basic operations (continued)

Turning off the power



1 Press the STANDBY/ON button for approximately 1 sec.

- The Power indicator will blink orange, then the lamp will turn off. Approximately 1 sec. after that, the lamp will light orange.
- After the power is turned off, the lamp will be cooled for approximately 1 min. and the power cannot be turned off even by pressing the STANDBY/ON button.
- The standby status will not be entered if the time which the STANDBY/ON button is pressed is too short.

2 Turn off the main power switch of the projector [○ : OFF].

3 Attach the lens cap.

Caution The fan will continue running for approximately 1 min. after the STANDBY/ON button is pressed. Do not turn off the main power switch while the lamp is on because this will shorten the service life of the lamp.

Plug & Play

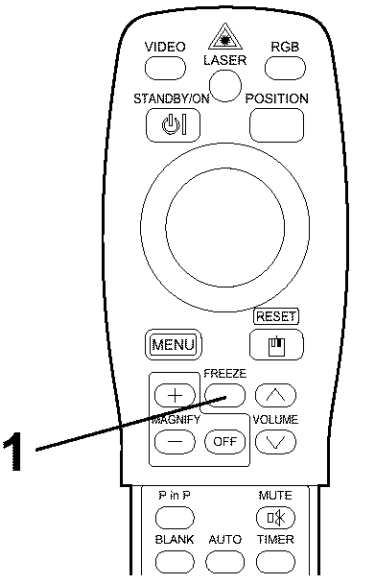
This projector is VESA DDC 1/2B compatible. Plug & play is possible by connecting to a computer that is VESA DDC (Display Data Channel) compatible.
(Plug & play is a system configured with peripheral equipment including a computer and display, and an operating system.

Caution Use the RGB cable included with this projector when using plug & play. With other cables, pins (12) - (15) are sometimes not connected (effective only for RGB).

Basic operations (continued)

Freeze function

This function is used to freeze the image being displayed.
(refer to page 10)



1 Press the FREEZE button.

- The image being displayed will freeze.
- The [▌▌] mark appears in the lower right corner of the screen when the Freeze function is on.

Cancelling the FREEZE function

1 Press the FREEZE button.

- The FREEZE function will be cancelled.
- The [▶] mark will be displayed for approximately 3 sec. when the FREEZE function is cancelled.

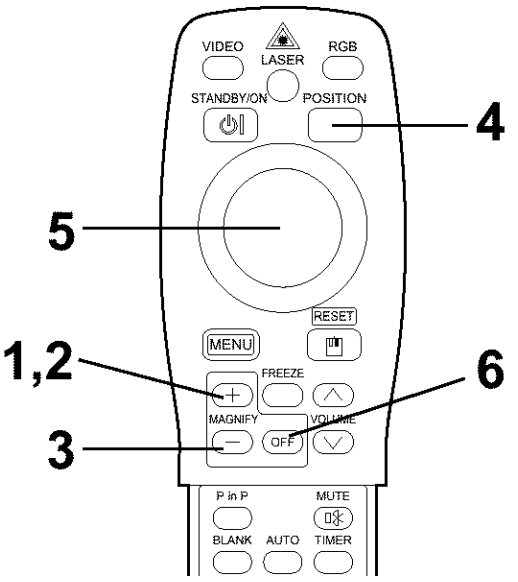
Caution

- When there is no input signal, the Freeze function is not effective when the input signal is outside the sync range.
- Pressing the FREEZE button alternately turns the freeze function on and off.
- The FREEZE function will be cancelled when the input select button is pressed or the display mode of the PC being used for display is changed.
- When a still image signal is input when the FREEZE function is on, make sure not to forget to cancel the FREEZE function.
- FREEZE function will be cancelled after the operations such as “menu display ON” “FOCUS”, “MAGNIFY”, “P in P”, “AUTO”, “VOLUME ∧ ∨”, “MUTE” and “POSITION”.

Basic operations (continued)

Magnify function

Part of an image can be displayed magnified.
(refer to page 10)



1 Press the MAGNIFY + button.

• The center part of the image will be displayed magnified approximately two times.

Changing the magnification ratio

2 Press the MAGNIFY + button.

• When this button is pressed, the image will be displayed even larger.

3 Press the MAGNIFY – button.

• When this button is pressed, the image will be displayed even smaller.

Moving the display area

4 Press the POSITION button.

5 Press the DISK PAD up, down, left and right buttons.

• The magnified area will move in accordance with the button pressed.

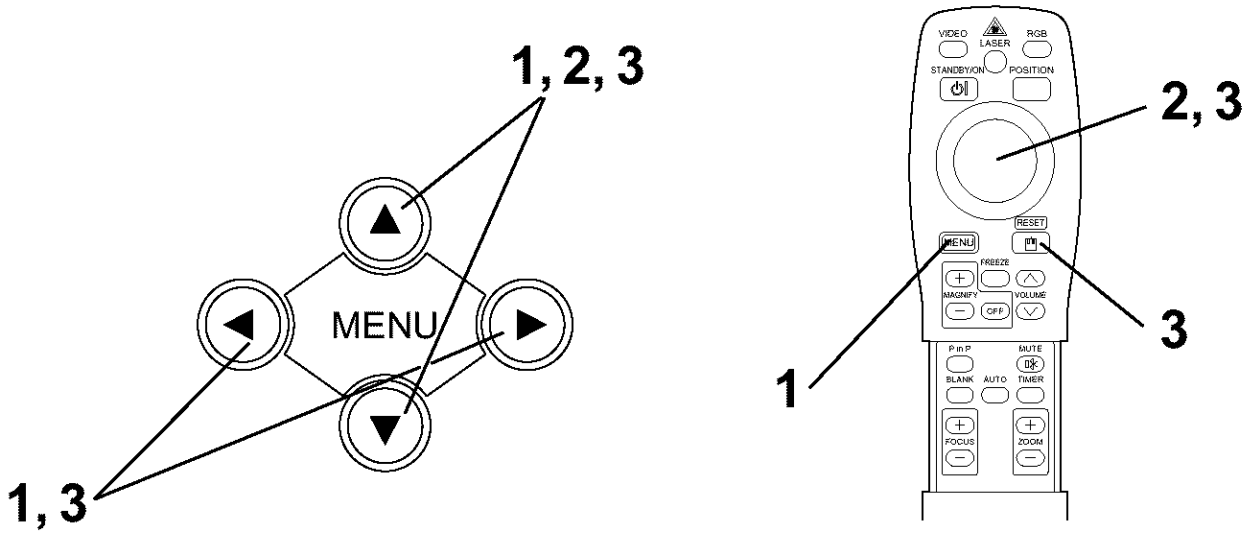
Returning to normal display

6 Press the MAGNIFY OFF button.

Caution

• When there is no video signal input, Magnify is not effective when the video signal input is outside the sync range.
• The magnify function will be cancelled when the input select button is pressed or the display mode of the PC being used for display is changed.
• The Magnify function will be cancelled after the operations such as “menu display ON”,“FOCUS”, “FREEZE”, “P inP”, “AUTO”, “VOLUME ∧ ∨”, “MUTE”, and “POSITION”.

Adjustments and functions



1 **Press the MENU (▲▼◀▶) buttons of the projector or the MENU button of the remote control.**

• The Menu screen will appear. (refer to page 18 - 21 for details.)

2 **Press the MENU (▲▼◀▶) buttons of the projector or the DISK PAD button of the remote control to select the menu item to be adjusted.** • The selected menu item will be displayed in orange.

3 **Adjust the selected menu item with the MENU (▲▼◀▶) buttons of the projector or the DISK PAD button of the remote control.**

• The selected menu item will be displayed in orange.

Returning to the initial settings

• Select the adjustment item to be returned to the initial settings.

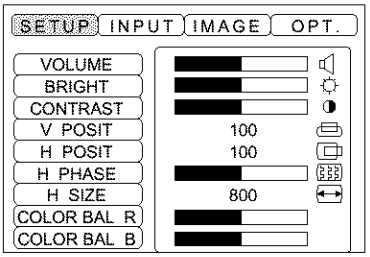
• Press the RESET button.

Adjustments and functions (continued)

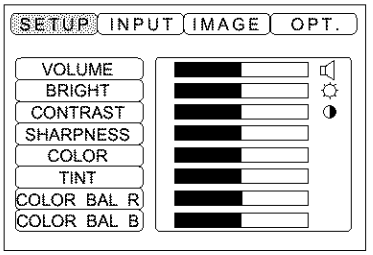
SET UP

Images and display positions can be adjusted from the SETUP menu.

RGB signal input



Video signal input



Adjustment item	Adjustment description
VOLUME	Volume decreases ◄► Volume increases
BRIGHT (BRIGHTNESS)	Darker ◄► Brighter
CONTRAST	Lower contrast ◄► Stronger contrast
SHARPNESS	Softer image ◄► Sharper image
COLOR	Less ◄► More
TINT	Redder ◄► Greener
V. POSIT (V. POSITION)	Moves the image up and down.
H. POSIT (H. POSITION)	Moves the image left and right.
H. PHASE	Eliminates blanking.
H. SIZE	Adjusts the horizontal size of the image.
COLOR BAL R (COLOR BALANCE Red)	Less red ◄► More red
COLOR BAL B (COLOR BALANCE Blue)	Less blue ◄► More blue

Using the SETUP Menu

Move the cursor to the item to be adjusted and move the MENU button of the projector or the DISK PAD button of the remote control to change the length of the bar display.

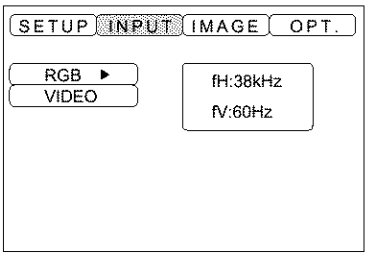
Caution

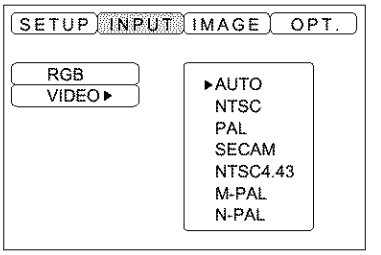
- The menu cannot be displayed while the initial screen ("No input is detected." or "Sync is out of range.") is being displayed.
- Tint cannot be adjusted with PAL or SECAM video signal input.
- Tint, color and sharpness cannot be adjusted with RGB signal input.
- V. POSIT, H. POSIT, H. PHASE and H. SIZE cannot be adjusted with video signal input.
- The MAGNIFY or FREEZE function will be cancelled after the operation "Menu".
- Displaying the menu cancels magnify and freeze operations.

Adjustments and functions (continued)

INPUT

The INPUT menu is used to select RGB signal sync signal frequency of the monitor and the VIDEO signal.



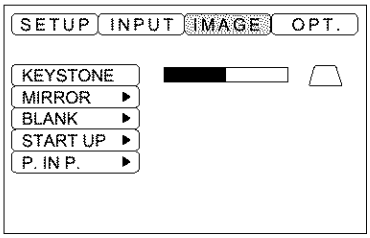


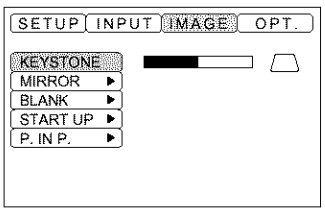
Adjustment item	Adjustment description
RGB	Displays the following RGB inputs fH: horizontal sync frequency fV: vertical sync frequency
VIDEO	Sets the video signal system. When the screen is unstble (no color) or rolls, select the mode that matches the input signal.

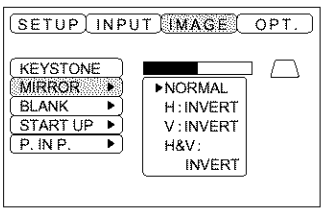
Adjustments and functions (continued)

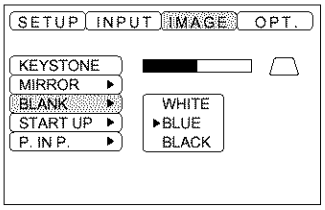
IMAGE

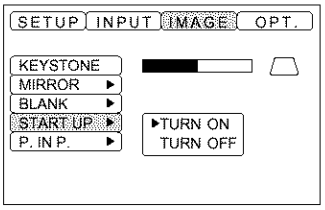
Projection image inversion, etc., can be selected from the IMAGE menu.

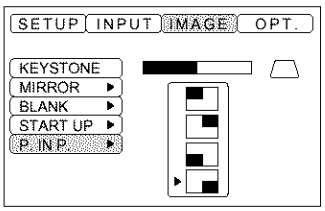










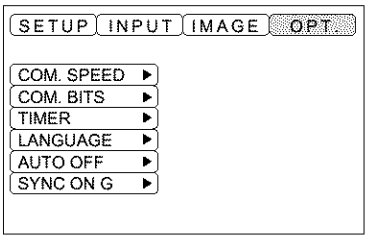


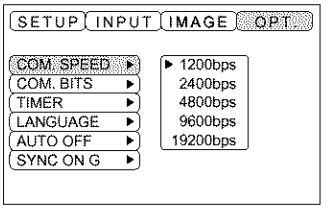
Adjustment item	Adjustment description
KEYSTONE	Reduces keystone distortion at the bottom ⟷ Reduces keystone distortion at the top
MIRROR	Sets vertical or horizontal inversion of the projected image. H: horizontal inversion only V: vertical inversion only H&V: both horizontal and vertical inversion.
BLANK	Sets the color to be used for blanking with BLANK ON or when there is no signal. Blanking is turned on when there is no signal for approximately 5 min.
START UP	Opens and closes the initial settings screen during signal input at start up.
P in P	Selects the P in P sub screen display position.

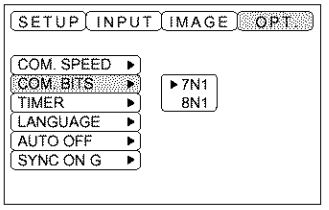
Adjustments and functions (continued)

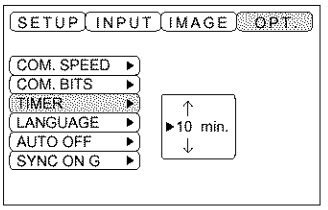
OPT

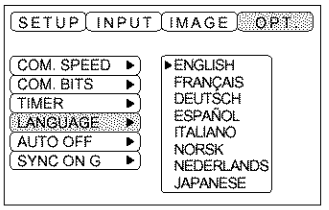
Communication functions, etc., can be set from the OPT menu.

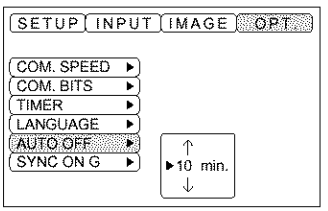


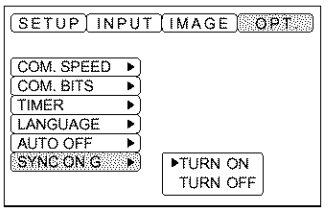












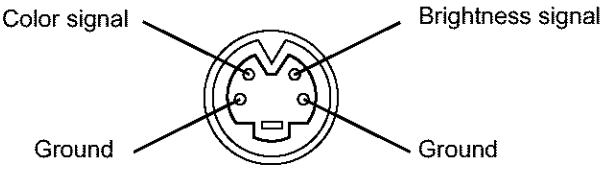
Adjustment item	Adjustment description
COM. SPEED	Sets the communication speed (5 steps).
COM. BITS	Sets the bit configuration for the communication data. 7N1...7 data bits, No parity, 1 stop bit. 8N1...8 data bits, No parity, 1 stop bit.
TIMER	Sets the timer display time (0 - 99) min.
LANGUAGE	Selects the menu screen language (English, French, German, Spanish, Italian, Norwegian, Dutch, Japanese).
AUTO OFF	Sets the time after which the power will be turned off (standby status) when there is no input signal. The settings are 1 - 99 min, 0 and None.
SYNC ON G	Sets the SYNC ON G feature on/off.

Connection to the video signal terminals

1. Input signals

S-VIDEO signal		Brightness signal Color signal	1.0V p-p, 75 Ω terminator 0.286V p-p (burst signal), 75 Ω terminator
VIDEO signal			1.0V p-p, 75 Ω terminator
Audio signal	Input		200mV rms, 20k Ω or less (max. 3.0V p-p)
	Output		0~200mVrms,1k Ω

2. Signal input jacks



S-VIDEO input (mini DIN 4-pin)

Caution The priority sequence of the video input jacks is as follows.
(1) S-VIDEO input jack (2) RCA jack input jack
When video signals are being projected, the audio input by the video is output to the audio output jack (RGB/VIDEO).

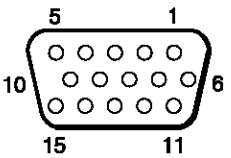
Connection to the RGB signal terminal

1. Input signals

Video signal		Analog, 0.7V p-p, 75 Ω terminator (positive polarity)
Horizontal sync signal		TTL level (positive/negative polarity)
Vertical sync signal		TTL level (positive/negative polarity)
Compound sync signal		TTL level
Audio signal	Input	200mV rms, 20k Ω or less (max. 3.0V p-p)
	Output	0~200mVrms,1k Ω

2. Signal input jacks

1	Video input (red)	9	N.C
2	Video input (green)	10	Ground
3	Video input (blue)	11	N.C
4	N.C	12	DDC jack (Display Data Channel)
5	N.C	13	Horizontal sync signal/compound sync signal
6	Ground (red)	14	Vertical sync signal
7	Ground (green)	15	DDC jack (Display Data Channel)
8	Ground (blue)		



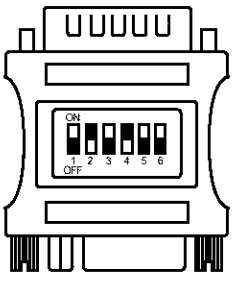
D-sub 15-pin
shrink jack

Connection to the RGB signal terminal (continued)

3. Example of computer signal

Resolution H × V	fH (kHz)	fV (Hz)	Rating	Signal mode	Display mode	Note 1
640 × 400	24.8	56.4		NEC PC9800	Zoom in	
640 × 350	37.9	85.1	VESA	VGA-1	Zoom in	
640 × 400	37.9	85.1	VESA	VGA-2	Zoom in	
720 × 400	37.9	85.0	VESA	TEXT	Zoom in	
640 × 480	31.5	59.9	VESA	VGA-3	Zoom in	
640 × 480	35.0	66.7		Mac13"mode	Zoom in	SW 1 ON SW 2 ON
640 × 480	37.9	72.8	VESA	VGA-3(72Hz)	Zoom in	
640 × 480	37.5	75.0	VESA	VGA-3(75Hz)	Zoom in	
640 × 480	43.3	85.0	VESA	VGA-3(85Hz)	Zoom in	
800 × 600	35.2	56.3	VESA	SVGA(56Hz)		
800 × 600	37.9	60.3	VESA	SVGA(60Hz)		
800 × 600	48.1	72.2	VESA	SVGA(72Hz)		
800 × 600	46.9	75.0	VESA	SVGA(75Hz)		
800 × 600	53.7	85.1	VESA	SVGA(85Hz)		
832 × 624	49.7	74.5		Mac16"mode	Zoom in	SW 2 ON SW 4 ON
1024 × 768	48.4	60.0	VESA	XGA(60Hz)	Zoom out	
1024 × 768	56.5	70.1	VESA	XGA(70Hz)	Zoom out	
1024 × 768	60.0	75.0	VESA	XGA(75Hz)	Zoom out	
1152 × 768	67.5	75.0	VESA	SXGA(75Hz)	Zoom out	
1280 × 960	60.0	60.0	VESA	SXGA(60Hz)	Zoom out	
1280 × 1024	64.0	60.0	VESA	SXGA(60Hz)	Zoom out	
1280 × 1024	80.0	75.0	VESA	SXGA(75Hz)	Zoom out	

Note 1: Mac adapter is necessary to the resolution mode.
Projector is compatible with 13 inch mode and 16 inch mode.
Mac 13" mode=switch 1 and switch 2 are ON.
Mac 16" mode=switch 2 and switch 4 are ON.



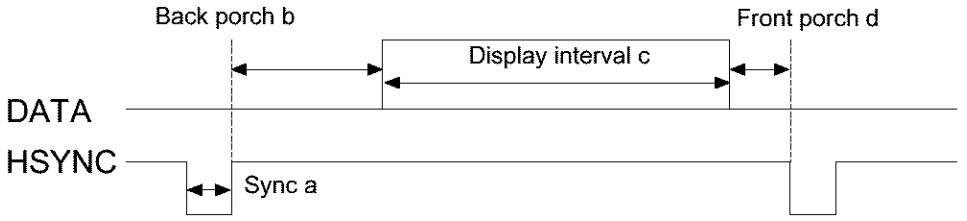
(Example 16 inch mode)

Caution
- Some computers may have multiple display screen modes. Use of some of these modes will not be possible with this projector.
- Be sure to check jack type, signal level, timing and resolution before connecting this projector to a computer.
- Depending on the input signal, full-size display may not be possible in some cases. Refer to the number of display pixels above.

Connection to the RGB signal terminal (continued)

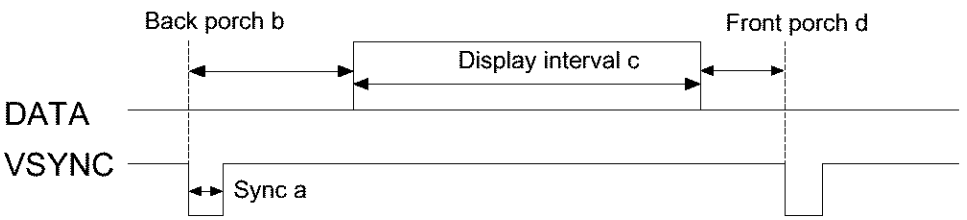
4. Initial set signals

The following signals are used for the initial settings.
The signal timing of some computer models may be different. In such case, refer to pages 17 and 18 and adjust the V.POSIT and H.POSIT of the menu.



Computer/Signal	Horizontal signal timing (µs)			
	a	b	c	d
VGA-1(85Hz)	2.0	3.0	20.3	1.0
VGA-2(85Hz)	2.0	3.0	20.3	1.0
PC-9800	3.0	3.8	30.4	3.0
TEXT	2.0	3.0	20.3	1.0
VGA-3	3.8	1.9	25.4	0.6
Mac 13"mode	2.1	3.2	21.2	2.1
VGA-3(72Hz)	1.3	3.8	20.3	1.0
VGA-3(75Hz)	2.0	3.8	20.3	0.5
VGA-3(85Hz)	1.6	2.2	17.8	1.6
SVGA(56Hz)	2.0	3.6	22.2	0.7
SVGA(60Hz)	3.2	2.2	20.0	1.0

Computer/Signal	Horizontal signal timing (µs)			
	a	b	c	d
SVGA (72Hz)	2.4	1.3	16.0	1.1
SVGA (75Hz)	1.6	3.2	16.2	0.3
SVGA (85Hz)	1.1	2.7	14.2	0.6
Mac 16"mode	1.1	3.9	14.5	0.6
XGA (60Hz)	2.1	2.5	15.8	0.4
XGA (70Hz)	1.8	1.9	13.7	0.3
XGA (75Hz)	1.2	2.2	13.0	0.2
SXGA (1152 X 864, 75Hz)	1.2	2.4	10.7	0.6
SXGA (1280 X 960, 60Hz)	1.0	2.9	11.9	0.9
SXGA (1280 X 1024, 60Hz)	1.0	2.9	11.9	0.9
SXGA (1280 X 1024, 75Hz)	1.1	1.8	9.5	0.1

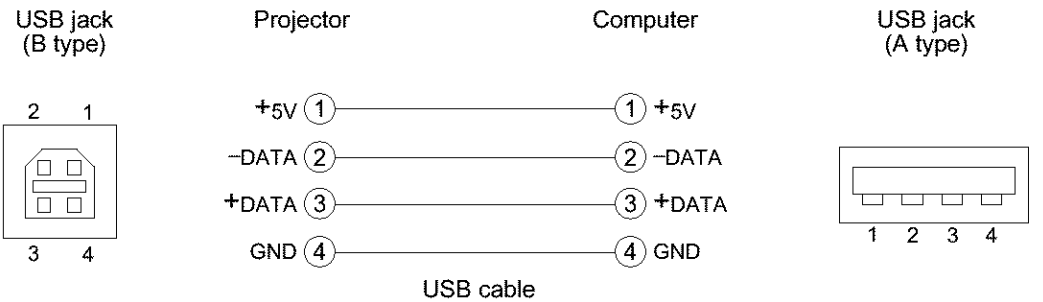


Computer/Signal	Vertical signal timimg (lines)			
	a	b	c	d
VGA-1 (85Hz)	3	60	350	32
VGA-2 (85Hz)	3	41	400	1
PC-9800	8	25	400	7
TEXT	3	42	480	1
VGA-3	2	33	480	10
Mac 13"mode	3	39	480	3
VGA-3 (72Hz)	3	28	480	9
VGA-3 (75Hz)	3	16	480	1
VGA-3 (85Hz)	3	25	480	1
SVGA (56Hz)	2	22	600	1
SVGA (60Hz)	4	23	600	1

Computer/Signal	Vertical signal timimg (lines)			
	a	b	c	d
SVGA (72Hz)	6	23	600	37
SVGA (75Hz)	3	21	600	1
SVGA (85Hz)	3	27	600	1
Mac 16"mode	3	39	624	1
XGA (60Hz)	6	29	768	3
XGA (70Hz)	6	29	768	3
XGA (75Hz)	3	28	768	1
SXGA (1152 X 864, 75Hz)	3	32	864	1
SXGA (1280 X 960, 60Hz)	3	36	960	1
SXGA (1280 X 1024, 60Hz)	3	38	1024	1
SXGA (1280 X 1024, 75Hz)	3	38	1024	1

Connecting the USB

1. Connect the projector and computer with a suitable commercially available cable.
2. Press the INPUT button of the projector or the RGB 1/2 button of the remote control and select the input where the computer is to be connected.
3. Start the mouse function.
4. Refer to page 10, 26 concerning the remote control of mouse operations.
5. Varying the force with which the DISK PAD button is pressed varies the speed of mouse operation.



Caution

- Before making connections, read the instruction manual of the equipment to be connected.
- Use the optional USB cable to connect.
- Effective with USB only when the mouse is used.
- Do not use with any device other than a personal computer.
- When using with Windows 95, it is necessary to set so that USB can be used with version OSR 2.1 or higher. Depending on the kind or the virsion of the host controller, operation may not be possible in some cases.
- In the case of notebook type computers with a built-in pointing device such as a track ball, in some cases the built-in pointing device will have priority even if a mouse is connected and the mouse may not be selected.
  In such case, disable the built-in pointing device and change the BIOS setting (system setup) so that an external mouse can be selected.
  After changing the BIOS setting, perform the operations described in 1 - 3 above.
  Refer to the computer hardware manual concerning the BIOS setting.
  Also, some computers may not have a utility program to operate a mouse. Refer to the computer hardware manual.

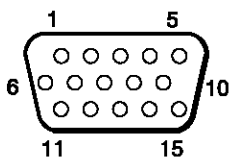
Connection to the control signal terminal

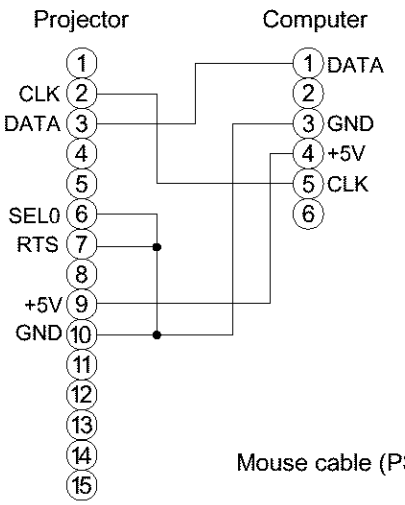
1. Mouse functions

(1) Turn off the main power switches of the projector and computer and connect the two units with the cable provided or an optional suitable commercially available cable. Disconnect the USB cable from the projector.
(2) Turn on the main switch of the projector (the ON indicator lamp will light green).
(3) Press the INPUT button of the projector or the RGB button of the remote control and select the input where the computer is to be connected.
(4) Turn on the computer power supply.
(5) Start the mouse function.
If the mouse has not been started, reboot the computer (soft reboot or reboot buttons).
(6) Refer to page 10 concerning remote control operation.
(7) Varying the force with which the DISK PAD button is pressed varies the speed of mouse operation.

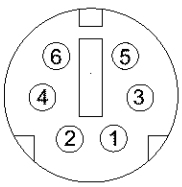
PS/2 Mouse

control jack
D-sub 15-pin shrink jack





Mouse jack Mini DIN 6-pin



Use the mouse cable provided or a PS/2 mouse cable (for IBM and compatibles).
Cables for ADB mouse (Apple), bus mouse (NEC) and serial mouse are available as options.

Mouse cable	Product name	Model
ADB mouse	COE-MAC (ADB)-2	SC-MA201XC
Bus mouse	COE-PC98 (BUS)-2	SC-MN201XC
Serial mouse	COE-SERIAL-2	SC-MS201XC

Caution

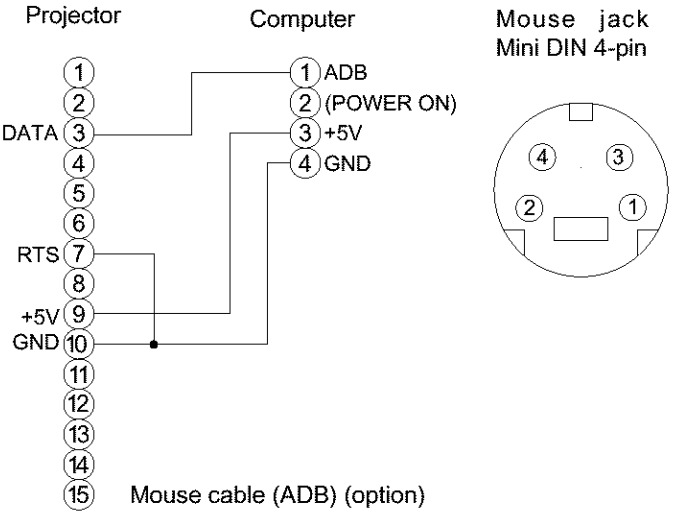
- Before making connections, read the instruction manual of the equipment to be connected.
- Turn off the projector and computer power supplies before connecting.
  Connecting the mouse cable with the computer power on can result in a malfunction.
  Use the mouse cable provided or an optional mouse cable to make the connection.
- In the case of notebook type computers with a built-in pointing device such as a track ball, in some cases the built-in pointing device will have priority even if a mouse is connected and the mouse may not be selected.
  In such case, disable the built-in pointing device and change the BIOS setting (system setup) so that an external mouse can be selected.
  After changing the BIOS setting, perform the operations described in (1) - (3) above.
  Refer to the computer hardware manual concerning the BIOS setting.
  Also, some computers may not have a utility program to operate a mouse. Refer to the computer hardware manual.

Connection to the control signal terminal (continued)

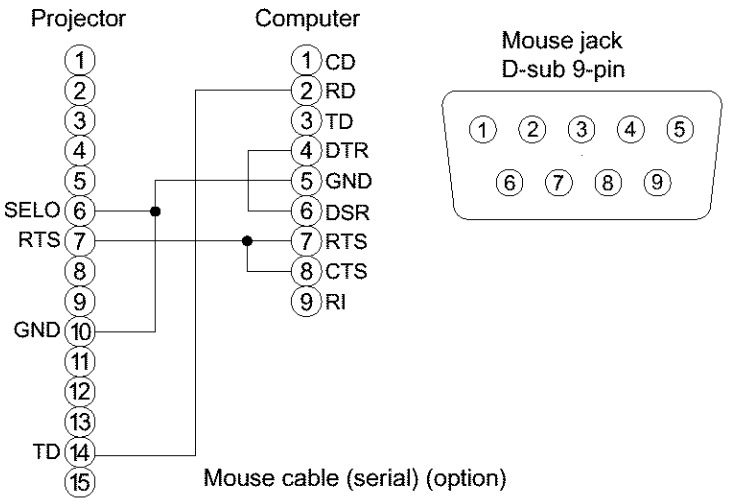
CONTROL signal jack

Pin no.	RS-232C	Mouse			
		PS/2	ADB	Serial	BUS
1					YB
2		CLK			
3		DATA	DATA		
4					XA
5					XB
6	SELO	SELO		SELO	SELO
7	RTS	RTS	RTS	RTS	RTS
8					YA
9		+5V	+5V		+5V
10	GND	GND	GND	GND	GND
11					SW-L
12					SEL-1
13	RD				
14	TD			TD	
15					SW-R

ADB (Mac) mouse



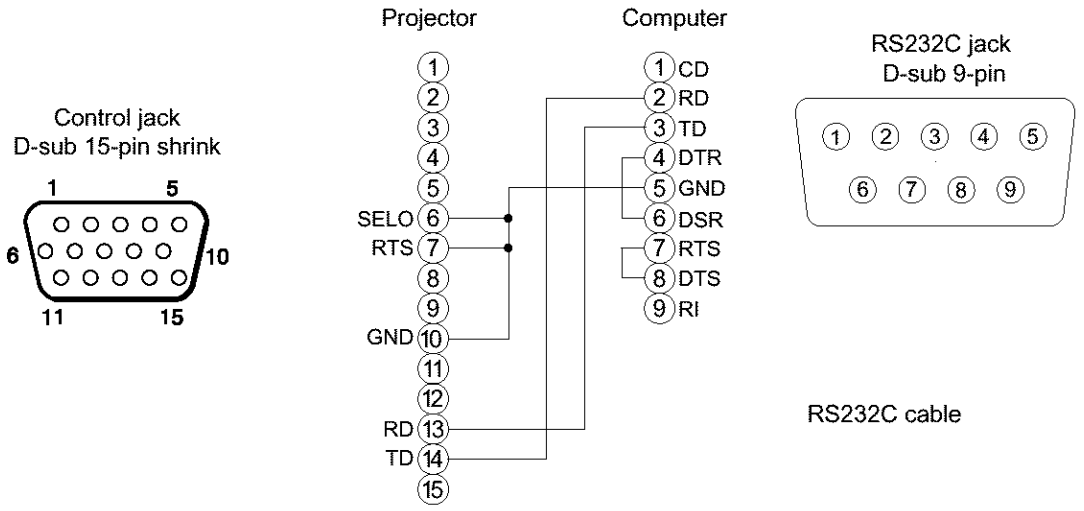
Serial mouse



Connection to the control signal terminal (continued)

2. RS232C communication

(1) Turn off the projector and computer power supplies and connect with the RS232C cable.
(2) Turn on the computer power supply and, after the computer has started up, turn on the projector power supply.
(3) Refer to page 20, 21 and set the communication speed and the number of communication bits.
(4) Start RS232C communication.



Command	Projector→computer	Computer→projector		
	Response code	Inquiry code	Setting code	Default setting code
	1st 2nd data	1st 2nd	1st 2nd data	1st 2nd
MOUSE	11h 05h +1	20h 05h	31h 05h +1	40h 05h
COMMUNICATE	11h 06h +1	20h 06h	31h 06h +1	40h 06h
POWER	11h 11h +1	20h 11h	31h 11h +1	———
ZOOM	11h 12h +1	———	31h 12h +1	———
FOCUS	11h 13h +1	———	31h 13h +1	———
MIRROR	11h 14h +1	20h 14h	31h 14h +1	40h 14h
INPUT	11h 21h +1	20h 21h	31h 21h +1	40h 21h
(VIDEO)SYSTEM	12h 22h +2	20h 22h	32h 22h +2	40h 22h
VOLUME	11h 23h +1	20h 23h	31h 23h +1	40h 23h
MUTE	11h 24h +1	20h 24h	31h 24h +1	40h 24h
BRIGHT	13h 31h +3	20h 31h	33h 31h +3	40h 31h
CONTRAST	13h 32h +3	20h 32h	33h 32h +3	40h 32h
COLOR	13h 33h +3	20h 33h	33h 33h +3	40h 33h
TINT	13h 34h +3	20h 34h	33h 34h +3	40h 34h
SHARPNESS	13h 35h +3	20h 35h	33h 35h +3	40h 35h
H.PHASE	13h 37h +3	20h 37h	33h 37h +3	40h 37h
H.POSIT	14h 38h +4	———	34h 38h +4	40h 38h
H.SIZE	14h 36h +4	———	34h 36h +4	40h 36h
V.POSIT	14h 3Ah +4	———	34h 3Ah +4	40h 3Ah
COLOR BALANCE R	13h 3Bh +3	20h 3Bh	33h 3Bh +3	40h 3Bh
COLOR BALANCE B	13h 3Dh +3	20h 3Dh	33h 3Dh +3	40h 3Dh
AUTO ADJUST	11h 3Ch +1	20h 3Ch	31h 3Ch +1	40h 3Ch
BLANK	11h 41h +1	20h 41h	31h 41h +1	40h 41h
MAGNIFY	11h 15h +1	20h 15h	31h 15h +1	40h 15h
FREEZE	11h 16h +1	20h 16h	31h 16h +1	40h 16h

Connection to the control signal terminal (continued)

Command data chart

Item	Data code
MOUSE	00h=disable mouse function, 01 ~ 7Fh=start mouse function
COMMUNICATE	0Xh=8N1, 1Xh=7N1 X0h=1200bps, X1h=2400bps, X2h=4800bps, X3h=9600bps, X4h=19200bps
POWER	3Eh=power off (standby status), 3Fh=power on
ZOOM	01 ~ 3Fh=Zoom +, 41 ~ 7Fh=Zoom –
FOCUS	01 ~ 3Fh=Focus +, 41 ~ 7Fh=Focus –
MIRROR	00h=Normal, 01h=H : Invert, 02h=V : Invert, 03h=H & V : Invert
INPUT	11h=VIDEO, 21h=RGB1, 22h=RGB2
SYSTEM (VIDEO)	00h 00h=Auto, 00h 01h=NTSC, 00h 04h=NTSC4. 43 00h 02h=PAL, 00h 03h=SECAM, 00h 05h=M-PAL, 00h 06h=N-PAL
VOLUME	00h (low volume) ~ 24h (high volume)
MUTE	00h=mute off, 01h=mute on
BRIGHT	00h 00h 00h (dark) ~ 00h 00h 24h (bright)
CONTRAST	00h 00h 00h (low) ~ 00h 00h 24h (strong)
COLOR	00h 00h 00h (pale) ~ 00h 00h 24h (dense)
TINT	00h 00h 00h (reddish) ~ 00h 00h 24h (greenish)
SHARPNESS	00h 00h 00h (soft) ~ 00h 00h 24h (sharp)
H.PHASE	00h 00h 00h ~ 00h 00h 24h
H.POSIT	00h 00h 00h 01h (Right) moves one step 00h 00h 00h 7Fh (Left) moves one step
H.SIZE	00h 00h 00h 01h (Large) moves two step 00h 00h 00h 7Fh (Small) moves two step
V.POSIT	00h 00h 00h 01h (Up) moves one step 00h 00h 00h 7Fh (Down) moves one step
COLOR BALANCE R	00h 00h 00h (Light red) ~ 00h 00h 24h (Dark red)
COLOR BALANCE B	00h 00h 00h (Light blue) ~ 00h 00h 24h (Dark blue)
AUTO ADJUST	00h (AUTO ADJUST (Play)), 07h (AUTO ADJUST (stop))
BLANK	0Xh=blanking off, 1Xh=blanking on X=8 Black, X=9 Blue, X=F White
MAGNIFY	00h=normal display, 01h=zoom Magnify display or Magnify ratio up. 7Fh=zoom ratio down
FREEZE	00h=normal display, 01h=still image display

The command code configuration consists of a 2-byte command and the following data.

- The first byte of a command indicates the command type with 3 bits on the MSB side and the data length with 4 bits on the LSB side.

Projector - computer	Computer - projector
'0xH' : Error code	'2xH' : inquiry code
'1xH' : response code	'3xH' : setting code
'70H' : frame error code	'4xH' : default setting code

'x' indicates the data length (example: x=2 means a 2-byte command).

- The second byte of a command indicates the command contents.

Connection to the control signal terminal (continued)

Requesting projector status

(1) Send the request code '20H' + 'yyH' from the computer to the projector.
(2) The projector returns the response code '1xH' + 'yyH' +data to the computer.

Changing the projector settings

(1) Send the setting code '3xH' + 'yyH' +data from the computer to the projector.
(2) The projector changes the setting based on the above setting code.
(3) The projector returns the response code '1xH' + 'yyH' +data to the computer.

> Caution The response data in (3) above need not match the setting data in (1).
> For example, when the projector cannot set the setting data in (1), the projector may set the closest value. That value will be used as the response data in (3). Or else the projector will return the error code '0xH' + 'yyH' +data.

Using the projector default settigns

(1) The computer sends the default setting code '40H' + 'yyH' to the projector.
(2) The projector changes the specified setting to the default value.
(3) The projector returns the default value with the response code '1xH' + 'yyH' =data.

When a command sent by the projector cannot be understood by the computer

(1) The computer sends the command code '3xH' , '4xH' or '4xH' + 'yyH' +data to the projector.
(2) When the command sent by the projector cannot be understood, the error command '00H' + 'yyH' is returned by the computer.

When data sent by the projector cannot be understood

(1) The computer sends the command code '3xH' , '4xH' or '4xH' + 'yyH' +data to the projector.
(2) When the command sent by the projector cannot be understood, the the error code '0xH' +'yyH' +data is returned.
When the data length is greater than indicated by the data length code, the projector will ignore the excess data code. Conversely, when the data length is shorter than indicated by the data length code, an error code will be returned to the projector.

When a frame error occurs

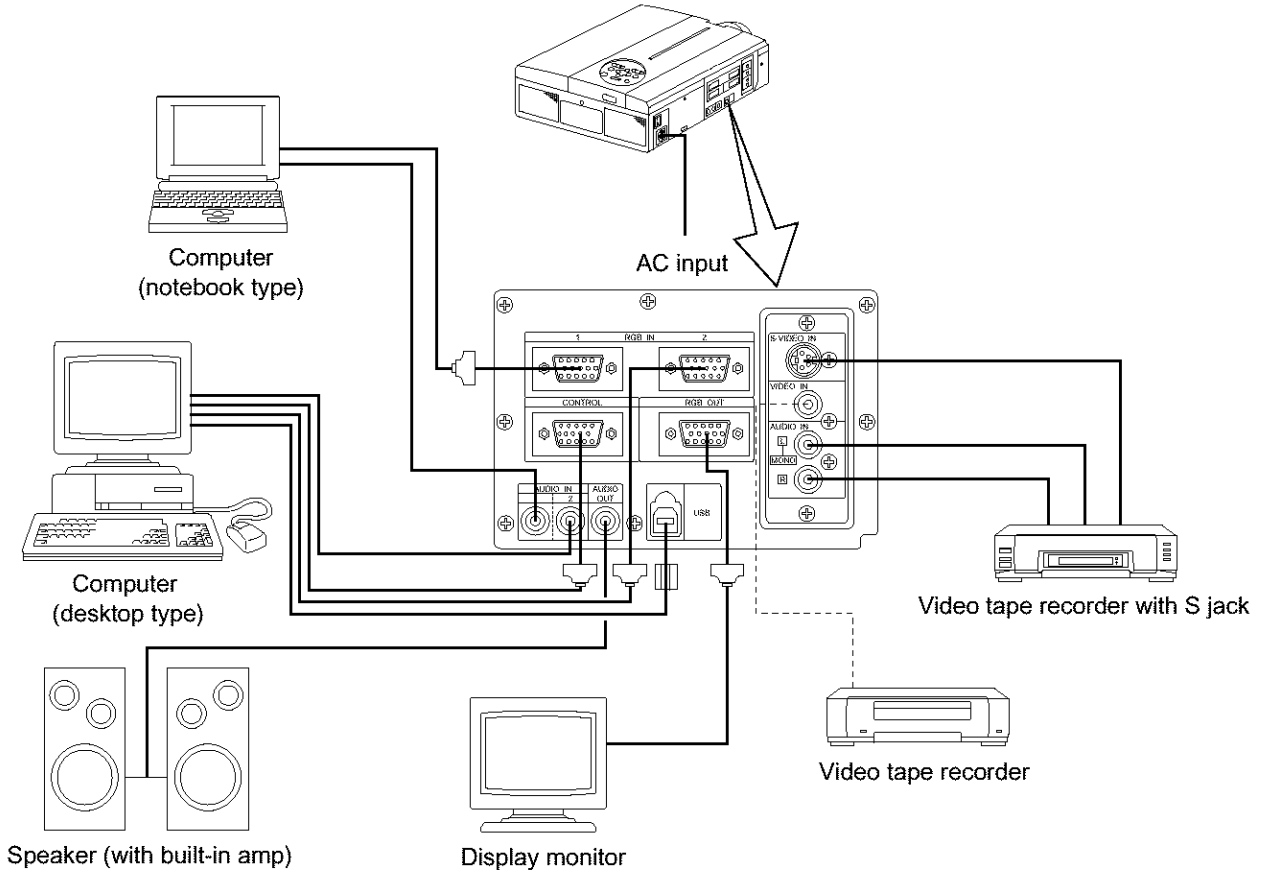
Repeats 10 times per second until there is some sort of response to the error code 70H + 70H.

When the interval between bytes in one command is 500ms or greater

When a command or data is not sent within 500ms after the command code '2xH' , '3xH' or '4xH' is sent by the computer, the error command '70H' +'70H' will be returned as soon as the 500ms elapses. After this, if there is no response within 1 sec., a frame error will occur.

> Caution • Operation cannot be guaranteed when the projector receives an undefined command or data.
> • Provide an interval of at least 40ms between the response code and any other code.

Example of system setup



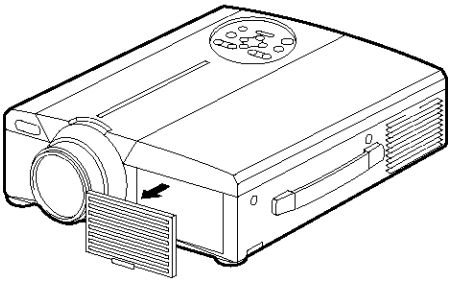
Caution Turn power off to all devices before connecting.
Refer to the instruction manual of each device before connecting.

Cleaning the Air filter

Clean the air filter about every 100 hours .

1 Turn off the MAIN POWER switch of the projector and pull out the power cord.

2 Remove the front air filter.



Filter	Model
Air Filter	MU00831

Cleaning the Air filter (continued)

3 Cleaning the air filter with a vacuum cleaner

4 Installing the air filter

Caution	When the air filter becomes clogged with dust, etc., the projector power may turn off to prevent the internal heat level rising. Do not operate the projector with the air filter removed.

Lamp

The light source lamp has a service life.
When used for an extended time, the images may become darker and the colors may deteriorate.
A malfunction could occur if the projector is used in this condition, so replace the lamp with a new one.
The following indicator or a message which appears when the power is turned on will indicate when the lamp should be replaced.
At such time, it is necessary to replace the lamp with a new one. For lamp replacement, please contact your dealer or service company.

Caution	The indicator lamp will also light red when the lamp unit overheats. In such case, turn off the main power switch, wait for a while (approx. 20 min.) and then turn the power on again. If the indicator lamp lights red again when the power is turned on, contact your dealer or service company.

Message table

Screen displays

The following messages are displayed on the screen.

CHANGE THE LAMP"CALL A MAINTENANCE PERSON"	The total lamp usage time is nearing the service life of the lamp. Replace whith a new lamp. The lamp will turn off automatically when the lamp replacement time has been exceeded. *1
"CHANGE THE LAMP" "CALL A MAINTENANCE PERSON" "THE POWER WILL TURN OFF AFTER * hr."	The total lamp time is nearing the lamp replacement time. After (*) hours, the lamp will turn off. Quickly replace with a new lamp. *1 *Indicates the number of hours until the lamp turns off automatically.
Blinking of "CHANGE THE LAMP"	The total lamp time has exceeded the replacement time. The lamp will blink for approximately 10 min. and then turn off automatically. Replace with a new lamp.
NO INPUT IS DETECTED	There is no signal input (refer to pages 22, 23).
SYNC IS OUT OF RANGE	The current horizontal or vertical frequency cannot be used by this projector (refer to pages 23, 24).

*1 This display will disappear after 3min. but will reappear when the power is turned on again.

Message table (continued)

Indicators

The POWER indicator, LAMP indicator and TEMP indicator light or blink in the following cases.

POWER indicator	LAMP indicator	TEMP indicator	Message	Processing
Lights orange	Turns off	Turns off	Standby status	———
Flashes green	Turns off	Turns off	Warming up	———
Lights green	Turns off	Turns off	Operation status *1	———
Flashes orange	Turns off	Turns off	Cool down	———
Lights red	Lights red	Turns off	The lamp does not light. *2	Wait some time (approx. 20 min.) before turning the power on again. If the indicator still lights, the lamp may have failed and. Replace with a new lamp.
Lights red	Flashes red	Turns off	A lamp has not been inserted or the lamp cover is missing.	Firmly insert the lamp as far as possible and screw the lamp cover in place.
Lights red	Turns off	Flashes red	The cooling fan is not operating.	Contact your dealer.
Flashes red	Flashes red	Turns off	The total lamp time has exceeded the replacement time.	Contact your dealer.

When the LAMP or TEMP indicator lights or flashes, turn off the MAIN POWER switch before proceeding. If the problem still persists, contact your dealer or service company.

*1: When the cooling fan is stopped and the interior becomes overheated, the power will turn off automatically to allow cooling (the indicator will turn off). In such cases, turn off the projector power, allow the set to cool and then turn the projector power on again. The lamp will then light. If the lamp does not light, contact your dealer or service company.

*2: In some cases, when the air holes becomes blocked and the interior temperature rises, the lamp will be turned off for protection and the LAMP indicator will flash red. In such cases, turn off the MAIN POWER switch, allow the set to cool (for approx. 20 min.) and then turn the power on again.

When you think something wrong

Before requesting repair, check in accordance with the following chart. If the situation cannot be corrected, then contact your dealer.

Symptom	Possible cause	Remedy	Page
The power is not turned on.	•The main power switch is not turned on. •The power cord is disconnected.	•Turn on the main power switch. •Plug the power cord into an AC power outlet.	P.13 P.9
No video or audio.	•The input is not correctly set. •No signal input.	•Use the projector or remote control to set. •Connect correctly.	P.8,10, 13,19 P.9,31
Video is present but no audio.	•The projector is not correctly connected. •The volume is seet to minimum. •Mute is turned on. •Audio is switched to Video when P in P is on.	•Connect correctly. •Press VOLUME + on the remote control or display the menu screen and adjust the volume. •Press the MUTE button. •Displays the Volume bar and switches the Audio input.	P.9,31 P.10,18 P.8,10 P.10
Audio is present but no video.	•The projector is not correctly connected. •The brightness adjustment knob is rotated fully clockwise. •The lens cap is still on.	•Connect correctly. •Select BRIGHT with the MENU button and then press the (▶) key. •Remove the lens cap.	P.9,31 P.17 P.13
Colors are pale and color matching is poor.	Color density and color matching are not correctly adjusted.	Adjust the video.	P.18
Images are dark.	•Brightness and contrast are not correctly adjusted. •The lamp is nearing the end of its service life.	•Adjust the video. •Replace with a new lamp.	P.18 P.32
Video is blurred.	Focus or H PHASE is out of adjustment.	Adjust the focus or H PHASE.	P.13,18
The LAMP indicator lights red.	Lamp failure.	Wait approximately 20 min. and then turn the power on again.	P.33
The TEMP indicator lights red.	Internal overheating.	•Make sure the ventilation openings are not blocked. •Clean the air filter. •Lower the ambient temperature to 35 degrees C or less.	P.31,32

A bright dot may be seen in the picture. This is a phenomenon peculiar to the liquid crystal and is not a problem.

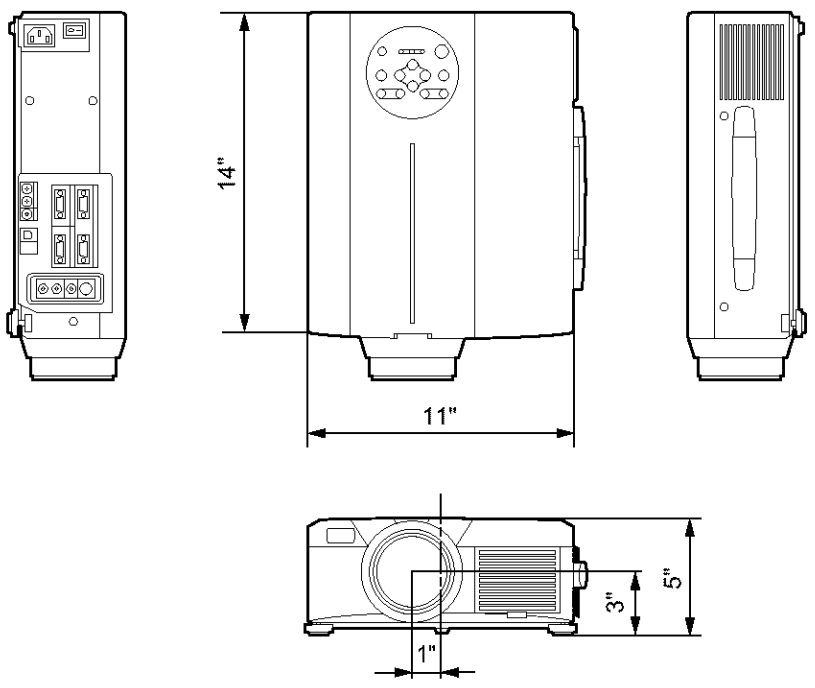
Specifications

· These specifications are subject to change without notice.

Product name		Liquid crystal projector
Model		CP-X960W/E
Display method		Three liquid crystal panels, three primary color system.
Liquid crystal panel	Panel size	3.3 cm (1.3 type)
	Drive system	TFT active matrix
	Number of pixels	786,432 pixels (768 horizontal × 1,024 vertical)
Lens		Zoom lens F=1.7~2.3 f=49~64mm
Lamp		190w UHB
Speaker		1.2W + 1.2W (Stereo)
Power supply		AC100 ~ 120V, 3.7A / AC220 ~ 240V, 1.5A.
Power consumption		320W
Operating temperature range		0 ~ 35˚C
Size		11" (W) × 5" (H) × 14" (D)
Weight (mass)		13 lbs
VIDEO signal input jacks		S VIDEO: mini DIN 4-pin jack VIDEO: RCA jack AUDIO: RCA jack
RGB signal input/output jacks		RGB signals: D-sub 15-pin shrink jack Audio: stereo mini-jack
CONTROL signal jack		D-sub 15-pin shrink jack

Dimensional Diagram

Unit: inches



About the warranty and after-service

About the warranty

A warranty is provided for this product. Fill in the necessary items and store in a safe place.

About after-service

When a problem occurs, please check first using the Troubleshooting Chart provided in this instruction manual.
If the problem still persists, contact your dealer or service company.

About repairs during the warranty period

Repairs will be made as described in the warranty.
For details, please read the warranty.

Repairs after the warranty period has elapsed

Paid repairs will be made if desired in the event that the function can be restored by such repairs.
Parts will be made available for a minimum period of 8 years.